Report Documentation Page

Form Approved
OMB No. 0704-0188

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
30 SEP 1999		**00-00-1999 to 00-00-1999**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
Tactical Atmospheric Modeling System-Real Time (TAMS-RT)	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **Naval Research Laboratory,Monterey,CA,93943-5502**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT **unclassified**	b. ABSTRACT **unclassified**	c. THIS PAGE **unclassified**	**Same as Report (SAR)**	**2**	

Tactical Atmospheric Modeling System-Real Time (TAMS-RT)

John Cook
Naval Research Laboratory
Monterey, CA 93943-5502
phone: (831) 656-4785 fax: (831) 656-4769 email: cook@nrlmry.navy.mil
Award Number: N0001499WX40070
http://stratus.nrlmry.navy.mil

LONG-TERM GOAL

This is a follow-on award to a 1998 accelerated technology initiative (Blue Book) to demonstrate an organic atmospheric data assimilation capability at the Naval Central Meteorology and Oceanography Center (NCMOC) Bahrain. The purpose of this award was to enhance the demonstration by supporting execution of tactical decision aids (TDA) using the organic high-resolution mesoscale model analysis and forecast fields as inputs.

OBJECTIVES

Support the NRL Tactical Atmospheric Modeling System-Real Time (TAMS-RT) installed in November 98 at NCMOC, including the Tactical Environmental Data Server (TEDS).

Implement the Vapor-Liquid-Solid Tracking (VLSTrack), NRL Stoplight Display, and Windows Electro-Optical Tactical Decision Aid (EOTDA) programs at NCMOC and link to the TEDS database for the model fields.

APPROACH

Since installation at NCMOC, the Space and Naval Warfare Systems Command (SPAWAR), who has configuration management oversight for TEDS, has changed the TEDS server from a Hewlett-Packard (HP) computer to a Sun E250 computer. This requires replacing the existing HP TEDS server in Bahrain with a Sun E250 and re-using the HP as the VLSTrack workstation.

Procure a Sun and Windows NT computer system. Install the TEDS database on the Sun computer and install Stoplights and EOTDA on the NT computer. Test the VLSTrack interface at NRL and ship the systems to NCMOC for installation. After installing the Sun and Windows NT systems, install DII/COE and VLSTrack software on the existing HP computer. Train the operators on using, administering, and maintaining the systems and turn over the functioning systems to NCMOC personnel.

Upgrade TAMS-RT system and applications software in Bahrain to be Y2K compliant.

WORK COMPLETED

Sun E250 and Windows NT computer systems were procured and shipped to NRL. TEDS was installed on the Sun computer and tested; Stoplights and EOTDA were installed and tested on the NT computer. The computers were shipped to NCMOC Bahrain and installed. At the same time, the two SGI computers used for TAMS-RT were upgraded to the latest version of the SGI IRIX operating system (Version 6.5) for Y2K compliance. DII/COE and VLSTrack software was then installed on the existing HP computer. The operators were trained in administration and maintenance of the computer systems and on use of visualization and VLSTrack software. Fully functional systems were turned over to NCMOC personnel.

RESULTS

For the first time, the Navy is capable of locally analyzing real-time on-scene observations to assess the atmospheric environment and generate an automated forecast. TAMS-RT allows an unprecedented capability to the forward deployed operator to tailor model domains and output products for the particular mission of their end-state user. This cutting-edge capability has been enhanced by this effort to utilize a common, physically consistent, high-resolution database to provide improved data to operational users who need to predict the capabilities of sensor and weapon systems.

IMPACT/APPLICATIONS

The ability to resolve mesoscale features influenced by complex terrain, and the use of the resultant data by decision aids will be of great value to the Navy by improving the safety of operations and enhancing the ability of forward-deployed forces to exploit the environment for tactical advantage. The impact of this capability will be evaluated in fleet exercises, beginning with Fleet Battle Experiment - Foxtrot in December 1999.

TRANSITIONS

The Fleet Numerical Meteorology and Oceanography Center (FNMOC) was named by the Commander, Naval Meteorology and Oceanography Command (CNMOC) as the lead transition activity to install TAMS-RT at the remaining six CNMOC sites during FY 00 and FY 01. An additional award from ONR was received to facilitate the transition (N0001499WX30427).

TAMS-RT also transitions to an existing 6.4 program at the Space and Naval Warfare Systems Command PMW 185 (SPAWAR PE 0603207N X2343): the On-Scene Tactical Atmospheric Forecast Capability (STAFC), a component of the Navy Integrated Tactical Environmental Subsystem (NITES I) Phase II.

RELATED PROJECTS

Related 6.2 projects within PE 0602435N are award numbers N0001499WX30121 (Shipboard model development), N0001499WX30271 (NOWCAST), N0001499WX30120 (EM/EO assessment), N0001499WX30427 (TAMS-RT transition), and N0001499WX40033 which encompasses the following NRL base projects: BE-35-2-32 (DaFWA), and BE-35-2-44 (moisture parameterization). The related 6.4 project under PE 0603207N is X2343 (STAFC).